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10/083,869	02/25/2002	Jae-Woo Roh	DE-1344	4709

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EXAMINER

KERVEROS, JAMES C

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,869

Applicant(s)

ROH ET AL

Examiner

JAMES C KERVEROS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received. .

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This is a Final Office Action in response to AMENDMENT filed 11/15/2004, in reply to the prior Office Action mailed 8/11/2004. Claims 1-22 are pending.

Claims 7, 14 and 22 rejected under 35 U.S.C. 112, second paragraph, in the prior Office Action, is hereby withdrawn in view of the amendment to the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chouly (US 6574775).

Regarding Claims 1 and 8, Chouly discloses a method of decoding encoded data based on a binary block code, comprising:

Forming an original block group, such as code of length N and dimension K from a source (2) divided into words of K bits [$l_{sub.0}$, . . . , $l_{sub.k-1}$] and processed by

encoding means 3 which generate a code word of N bits $[b_{\text{sub}.0}, \dots, b_{\text{sub}.N-1}]$, defined as a reference block, (FIG. 1).

Encoding $[b_{\text{sub}.N-1}]$ original blocks placed after the reference block group to generate n weighted blocks of n-bit codeword (weighting step 140), each of which corresponds to an A type weighted block or a B type weighted block (step 110) of input data $[r_{\text{sub}.0.\text{sup}.(j)}, \dots, r_{\text{sub}.N-1.\text{sup}.(j)}]$ divided into two groups, where one group corresponding to an A type weighted block (231) $S_{\text{sub}.(j)} \bmod(m)$, and the other corresponding to a B type weighted block (232) $S_{\text{sub}.(j)} \bmod(m)$, as shown in FIG. 2. Also, decoding means 203 produces the weighted sums $[r'_{\text{sub}.0.\text{sup}.(j)}, \dots, r'_{\text{sub}.N-1.\text{sup}.(j)}]$ stored in the memory 201, FIGS. 5 and 6.

Decoding the n weighted blocks of n-bit codeword of the coding group to generate n corresponding original blocks of m-bit message using decoding means (203, FIG. 6) by applying the data $[r_{\text{sub}.i.\text{sup}.(j)}, \epsilon \cdot S_{\text{sub}.(j)} \bmod(m)]$ to decoding means 231 for decoding the code $C_{\text{sub}.(j)} \bmod(m)$, and the data $[r_{\text{sub}.i.\text{sup}.(j)}, \epsilon \cdot S_{\text{sub}.(j)} \bmod(m)]$ to decoding means 232 for decoding the code $C'_{\text{sub}.(j)} \bmod(m)$.

Reconstructing a first original block of m-bit message from the sequence of the reference bits, such as input data $[r_{\text{sub}.0.\text{sup}.(0)}, \dots, r_{\text{sub}.N-1.\text{sup}.(0)}]$ using extraction means (21, FIG. 1) which deliver an estimation $[l_{\text{sub}.0}, \dots, l_{\text{sub}.K-1}]$ of the transmitted data word.

Regarding Claims 2-4 and 9-11, Chouly discloses an n-bit codeword input data $[r_{\text{sub}.0.\text{sup}.(j)}, \dots, r_{\text{sub}.N-1.\text{sup}.(j)}]$ comprising (A) type weighted block (231)

$S_{\text{sub}(j) \bmod(m)}$, and (B) type weighted block $(232) S_{\text{sub}(j) \bmod(m)}$, as shown in FIG. 2. Both words consist of binary code having a bit of "1" and bit of "0", which may be classified A type weighted block corresponding to bit of "1" and B type weighted block corresponding to a bit of "0".

Regarding Claims 5-7 and 12-14, Chouly discloses an n-bit codeword input data $[r_{\text{sub}(0) \bmod(m)}, \dots, r_{\text{sub}(N-1) \bmod(m)}]$, wherein if the original block group is a $(2N-1)$, where "N" is a positive integer, assuming $N=1, 2, 3, 4, \dots, N$, then $(2N-1)=0, 1, 3, 5, \dots$, thus every ODD number is (A) type weighted block, if the original block group is a $2N$, assuming $N=1, 2, 3, 4, \dots, N$, then $2N=2, 4, 6, 8, \dots$, then the reference block of n-bit codeword is a B type weighted block. Regarding Claims 7 and 14, in view of the 35 U.S.C. 112, second paragraph rejection, as best understood, in solving the claimed relation, where "a" = 0, 1, 2, 3, 4 being a positive integer, and $n-a = 8-2=6$.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chouly (US 6574775).

Regarding Claim 15, Chouly discloses an apparatus of decoding encoded data based on a binary block code, comprising:

A buffering device source (2) for outputting a digitalized image signal such as code of length N and dimension K from a source (2) divided into words of K bits $[l_{\text{sub}.0}, \dots, l_{\text{sub}.k-1}]$ and processed by encoding means 3 which generate a code word of N bits $[b_{\text{sub}.0}, \dots, b_{\text{sub}.N-1}]$, defined as a reference block, (FIG. 1).

An encoding part (encoding means 3) for encoding $[b_{\text{sub}.N-1}]$ original blocks placed after the reference block to generate n weighted blocks of n -bit codeword (weighting step 140), each of which corresponds to an A type weighted block or a B type weighted block (step 110) of input data $[r_{\text{sub}.0.\text{sup}.(j)}, \dots, r_{\text{sub}.N-1.\text{sup}.(j)}]$ divided into two groups, where one group corresponding to an A type weighted block (231) $S_{\text{sub}.(j)} \bmod(m)$, and the other corresponding to a B type weighted block (232) $S_{\text{sub}.(j)} \bmod(m)$, as shown in FIG. 2. Also, decoding means 203 produces the weighted sums $[r''_{\text{sub}.0.\text{sup}.(j)}, \dots, r''_{\text{sub}.N-1.\text{sup}.(j)}]$ stored in the memory 201, FIGS. 5 and 6.

A switch for (demultiplexer 230) which applies the data $[r_{\text{sub}.i.\text{sup}.(j)}, i.\text{epsilon}.S_{\text{sub}.(j)} \bmod(m)]$ to decoding means (231 and 232) for decoding the code $C_{\text{sub}.(j)} \bmod(m)$ and $C'_{\text{sub}.(j)} \bmod(m)$, respectively and using weighting means 234 for producing weighted subsequent input data $r_{\text{sub}.i.\text{sup}.(j+1)}$ which are stored in the memory 201, FIG. 6.

A buffer (memory 201) for storing data from the channel $[r_{\text{sub}.0.\text{sup}.(0)}, \dots, r_{\text{sub}.N-1.\text{sup}.(0)}]$ and the weighted sums $[r''_{\text{sub}.0.\text{sup}.(j)}, \dots,$

$r^{N-1}_{sub.(j)}$], corresponding to an A type weighted block (231) $S_{sub.(j)} \bmod(m)$, and the other corresponding to a B type weighted block (232) $S_{sub.(j)} \bmod(m)$, as shown in FIGS. 2, 5 and 6.

Decoding part (203, FIG. 6) for decoding the n weighted blocks of n -bit codeword of the coding group to generate n corresponding original blocks of m -bit message using decoding means (203, FIG. 6) by applying the data $[r_{sub.i, sup.(j)}, \epsilon S_{sub.(j)} \bmod(m)]$ to decoding means 231 for decoding the code $C_{sub.(j)} \bmod(m)$, and the data $[r_{sub.i, sup.(j)}, \epsilon S_{sub.(j)} \bmod(m)]$ to decoding means 232 for decoding the code $C'_{sub.(j)} \bmod(m)$.

Reconstructing a first original block of m -bit message from the sequence of the reference bits, such as input data $[r_{sub.0, sup.(0)}, \dots, r_{sub.N-1, sup.(0)}]$ using extraction means (21, FIG. 1) which deliver an estimation $[l_{sub.0}, \dots, l_{sub.K-1}]$ of the transmitted data word.

Chouly does not explicitly disclose the claimed features of a first control part for determining whether the original block is a first original block of m -bit message when the timing signal is first generated from the first buffer and a second control part for determining whether the weighted block is an A type weighted block or a B type weighted block. However, Chouly discloses first control part such as router 202 and a second control part such as demultiplexer 230 (FIG. 6) for applying the input data $[r_{sub.i, sup.(j)}, \epsilon S_{sub.(j)} \bmod(m)]$ to decoding means 231 for generating an A type weighted block (231) $S_{sub.(j)} \bmod(m)$, and a B type weighted block (232) $S_{sub.(j)} \bmod(m)$, as shown in FIG. 6. It would have been obvious to a person having

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ordinary skill in the art at the time the invention was made to use decoding means, as taught by Chouly, for determining whether the weighted block input data is an A or a B type, since Chouly already discloses two individual decoding means (231, 232) for decoding A or B type weighted data block, thus providing an optimum decoding by effecting iterations of a non-optimum decoding.

Regarding Claims 16 and 17, Chouly does not explicitly disclose a counting unit for counting the number of the timing signal provided from the first buffer, wherein the counting unit is reset on receiving an (n+1) timing signal generated from the first buffer. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use decoding means, as taught by Chouly, for determining whether the weighted block input data is an A or a B type, since Chouly already discloses two individual decoding means (231, 232) for decoding A or B type weighted data block, thus providing an optimum decoding by effecting iterations of a non-optimum decoding.

Regarding Claims 18-20, Chouly discloses an n-bit codeword input data $[r_{\text{sub}.0.\text{sup}.(j)}, \dots, r_{\text{sub}.N-1.\text{sup}.(j)}]$ comprising (A) type weighted block (231) $S_{\text{sub}.(j)} \bmod(m)$, and (B) type weighted block (232) $S_{\text{sub}.(j)} \bmod(m)$, as shown in FIG. 2. Both words consist of binary code having a bit of "1" and bit of "0", which may be classified A type weighted block corresponding to bit of "1" and B type weighted block corresponding to a bit of "0".

Regarding Claim 21, discloses an n-bit codeword input data where the sequence of the reference bits $[r_{sub.0}^{sup.(j)}]$ is identical to the bit sequence of the reference block.

Regarding Claim 22, in view of the 35 U.S.C. 112, second paragraph rejection, as best understood, in solving the claimed relation, where "a" = 0, 1, 2, 3, 4 being a positive integer, and $n-a = 8-2=6$.

Response to Arguments

4. Applicant's arguments filed 11/15/2004 have been fully considered but they are not persuasive. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chouly (US 6574775), and Claim 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chouly (US 6574775), as set forth in the present Office Action.

In reference to Claims rejected under 35 U.S.C. 102(e) as being anticipated by Chouly, Applicant argues on page 9, regarding independent Claims 1 and 8, that Chouly fails to disclose or even imply that the reference block is generated to indicate the type of the rest of the blocks in the block group, and that Chouly merely discloses the encoding of the source bits to implement the error correcting method in the communication system.

In response to Applicant's argument, claims 1 and 8 broadly recite "encoding a first original block.....to a reference block of n-bit codeword, which read on the Chouly reference of forming an original block of length N and dimension K from a source (2) divided into words of K bits $[l_{sub.0}, \dots, l_{sub.k-1}]$ and encoding the first original block

to a code word of N bits [b.sub.0, . . . , b.sub.N-1] corresponding to a reference block of n-bit codeword (Chouly, Figure 1). In examining the present Application, for example the claimed limitation of reference block was given the Broadest Reasonable Interpretation, in accordance with MPEP, section 2111. During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

Further, in response to Applicant's argument that Chouly fails to teach or even imply the generation of the reference bits to imply the type of the weighted block during the decoding process, Chouly describes in the Summary of the Invention "weighting means for calculating weighted sums of said transformed data and received data with a first and a second weight factor", also described in the Office Action above.

In response to applicant's argument that the references fail to show a feature recited in the arguments regarding "pixel values in the block is summed up and represented as a total intensity sum, so that each block is finally classified into one of the two types of the weighted block" based on the specification, such a feature does not carry patentable weight, since the feature upon which applicant relies is not recited in the rejected claims. Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In reference to Claims rejected under 35 U.S.C. 103(a) as being unpatentable over Chouly (US 6574775), Applicant argues on page 11, regarding independent Claim 15, that Chouly is silent on the encoding the source data based on the reference bits which are not actually transmitted through the channel, and therefore Chouly fails to reconstruct the reference bits. As indicated above in response to Applicant's argument, the Examiner broadly interprets the code word of N bits [b.sub.0, . . . , b.sub.N-1] to correspond to a reference block (Chouly, Figure 1), which is processed by encoding means and transmitted to decoding means for decoding reconstruction.

In response to applicant's argument, on page 12, the Examiner already admitted in the 103 rejection that Chouly does not explicitly disclose separating the received data into two categories. However, Chouly discloses a router 202 and a demultiplexer 230 (Figure 6) for applying the input data to decoding means 231 for generating an A type weighted block (231) and a B type weighted block (232), as shown in FIG. 6. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use decoding means, as taught by Chouly, for determining whether the weighted block input data is an A or a B type, since Chouly already discloses two individual decoding means (231, 232) for decoding A or B type weighted data block, thus providing an optimum decoding by effecting iterations of a non-optimum decoding.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES C KERVEROS whose telephone number is (571) 272-3824. The examiner can normally be reached on 9:00 AM TO 5:00 PM.

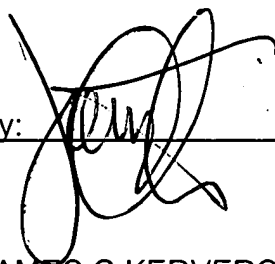
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Date: 15 March 2005
Office Action: Final Rejection

By: 
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Examiner
Art Unit 2133

Guy J. Lamarre
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